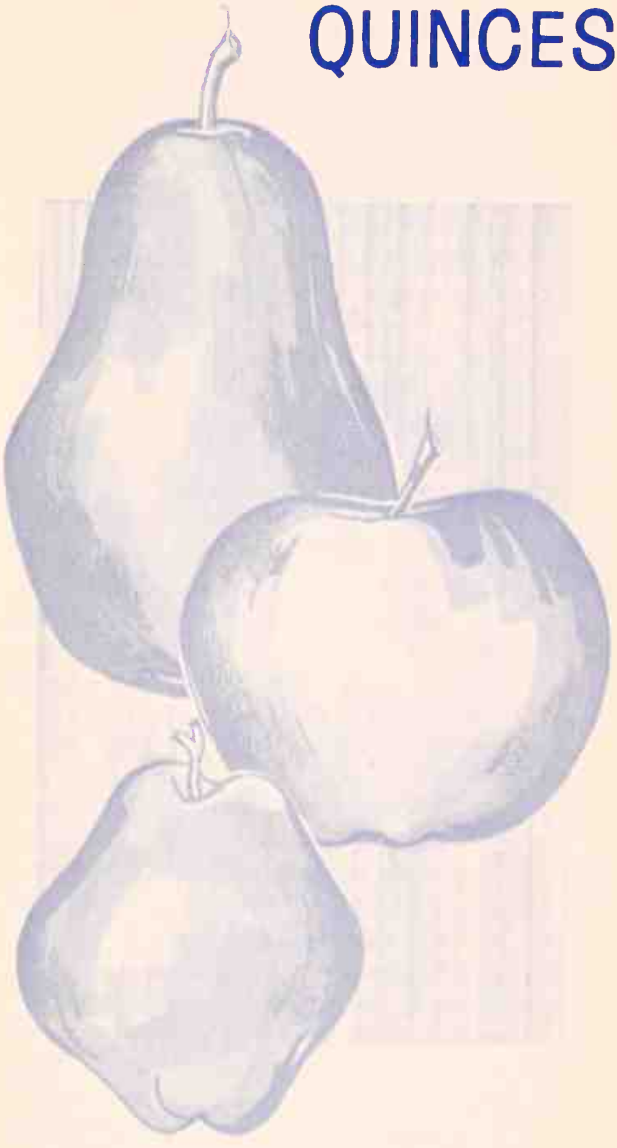
Blight of PEARS, APPLES, and QUINCES



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U.S. DEPARTMENT OF AGRICULTURE

Blight of PEARS, APPLES, and QUINCES

Blight, sometimes called fire blight or pear blight, is a common and destructive bacterial disease of pears and quinces. Blight attacks apples, too, and sometimes damages ornamental plantings of hawthorn, spirea, pyracantha, flowering almond, and mountain ash.

Blight attacks (1) blossoms and young fruits, causing them to blacken and die; (2) tender tips of twigs and water sprouts, often killing back the twigs for a foot or more and causing leaves to turn black; (3) spurs, large branches, trunk, collar (base of the tree), and roots. In a single season, blight can severely damage—or kill—the tree it attacks.

Blight usually appears first when fruit trees are in blossom and stays active until rapid spring growth stops (about a month after blooming). Don't prune or fertilize your fruit trees too heavily during this time. These practices may stimulate the trees to put out succulent growth, which is extremely susceptible to blight.

Blight of pears

Blight is so destructive to Bartlett, Clapp Favorite, Bosc, Flemish Beauty, and other high-quality pears, that these varieties can be commercially grown in only a few favored localities. In fact, most of our marketed pears are grown in three States—California, Oregon, and Washington—where the humidity is low. The introduction of overhead irrigation increases the spread of fire blight even in these localities. Such varieties as Magness, Moonglow, and Seckel are somewhat resistant to blight. The Kieffer variety is also quite resistant but it has poor fruit quality.

Blight of apples

Blight sometimes damages blossom clusters and young shoots on such susceptible apple varieties as Jonathan, Yellow Transparent, and Wealthy, but it seldom is serious enough to prevent commercial apple production. Red Delicious, Golden Delicious, and McIntosh have resistance.

Blight of quinces

Quince trees are very susceptible to blight. Small quantities are grown in this country for processing into jams and jellies. There are no blight resistant varieties.

HOW BLIGHT SPREADS

Bacteria that cause blight in the spring usually overwinter in cankers in the bark of large branches, trunks, or roots of trees attacked the previous year. Occasionally they overwinter in twigs or small branches.

From blight cankers, the bacteria may spread to open blossoms, and from blossoms to other trees. Insects that come in contact with the bacteria also help spread the disease. Insects, and probably rain, to some extent, carry bacteria from blossoms to twigs and water sprouts.

Usually hot, dry summer weather and the accompanying hardening of tree tissues prevent new blight infections, while helping old ones to die out. Sometimes, however, blight bacteria are so favorably situated in thick bark they do not dry out and are able to persist in holdover cankers.

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This Bartlett pear tree was killed by a severe blight attack. The healthy trees in the background were not infected.

HOW TO CONTROL BLIGHT

To control blight, prune out cankers and other diseased parts, and apply antibiotics or copper-base compounds. The method you choose will depend on your location, and on the extent of the blight infection.

Pruning

In late summer, inspect your trees and cut out all blighted twigs. Make cuts at least 8 to 12 inches below the diseased part of the twig. Cut out blighted tissue in the large limbs and trunk; extend the cut well into healthy tissue.

Inspect your trees again in late fall or early winter, after the leaves are off and it is easier to spot cankers that you might have missed.

Do not prune blighted blossoms and twigs in the spring, except when only a few trees are lightly infected. Postpone pruning until late summer or early fall, when blight usually is no longer active and the risk of spreading the infection is not as great.

Sometimes blight affects fruit trees so se-

verely you cannot cut away all blighted parts without killing the trees. In these cases, it is often effective to paint the cankered or diseased areas with a formulation of zinc sulfate. However, because this chemical can injure the healthy tissues next to treated areas, you should apply it carefully.

To prevent secondary infection by other organisms in tree parts that you have pruned, treat wounds and cuts larger than 1 inch in diameter with a tree-wound dressing.

After making each cut, dip the pruning tools in diluted household bleach (sodium hypochlorite). Mix 1 cup of 5.25-percent commercial bleach with 9 cups of water. Because this solution will corrode metals, wash tools in water each day at the end of pruning. Tools then should be dried and oiled to prevent them from rusting.

Spraying and dusting

The antibiotic, streptomycin, is one of the most effective materials known for control of fire blight. Begin antibiotic sprays as soon as color is detected in the flower buds and every 3 to 5 days until the petals fall. Continue applications at 7- to 14-day intervals following the bloom period. Stop spraying apples 50 days before harvest and pears 30 days before harvest. Early evening and nighttime applications of antibiotics provide better fire blight control than daytime applications.

Antibiotic sprays are partially absorbed by plant foliage which may cause some yellow-green mottling of the leaves (chlorosis). This mottling disappears only after you stop using the antibiotic.

You can supplement pruning and the application of zinc sulfate paints with a spray of weak bordeaux mixture. This is prepared by mixing 2 pounds of copper sulfate and 6 pounds of hydrated lime in 100 gallons of water, or two-thirds tablespoon of copper sulfate and 6 tablespoons of lime in 1 gallon of water.

A commercial tribasic copper sulfate spray mixture may also be used. Mix 1 pound of active ingredients in 100 gallons of water, or 1 tablespoon in 2 gallons of water. Also, a copper-lime dust mixture may be used; mix 20 parts finely ground copper sulfate with 80 parts hydrated lime.

Copper-base sprays or dusts applied to fruit trees during or after spring blossoming may cause the fruit to russet (develop rough, tough skin). To minimize this when sprays are used, apply sprays only when they will dry quickly.

USE OF PESTICIDES

Pesticides are safe and effective when used as directed. Used improperly they can be injurious to man, animals, and plants. The user is cautioned to read and follow all directions and precautions on the label of the pesticide formulation being used.

The amount and frequency of pesticide use may vary in different sections of the country. This publication is intended for nationwide distribution. Users of this publication may also wish to consult their State Agricultural Experiment Stations or County Extension Service for information applicable to their localities, or obtain the latest recommendation if this publication is more than 2 years old.

The pesticides mentioned in this publication were Federally registered for the use indicated as of the issue of this publication.

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